

WHAT IS CLAIMED IS:

1. A high transmittance glass sheet formed of a soda-lime-silica glass composition comprising, expressed in wt. %, less than 0.020% of total iron oxide in terms of Fe_2O_3 and 0.006 to 2.0% of zinc oxide.
2. The high transmittance glass sheet according to claim 1, wherein where an x-coordinate axis indicates a content of the total iron oxide expressed in ppm and a y-coordinate axis indicates a content of the zinc oxide expressed in ppm, the glass composition has contents of the total iron oxide and the zinc oxide whose values fall within a range defined by a square ABCD formed by connecting Point A (200, 60), Point B (200, 20,000), Point C (50, 20,000), and Point D (50, 180) in this order.
3. The high transmittance glass sheet according to claim 1, wherein the glass composition comprises, expressed in wt. %, not less than 0.005% to less than 0.020% of the total iron oxide, less than 0.008% of FeO, and 0 to 0.25% of cerium oxide;
the glass composition has an FeO ratio of lower than 40%, where the FeO ratio is a ratio of a content of FeO in terms of Fe_2O_3 to a content of the total iron oxide; and
the glass sheet has, on a 4.0 mm thickness basis, a solar radiation transmittance of 87.5% or higher, a visible light transmittance of 90.0% or higher, a dominant wavelength of 540 to 580 nm, and an excitation purity of 0.35% or lower, where the visible light transmittance, the dominant wavelength and the excitation purity are measured with illuminant C.
4. The high transmittance glass sheet according to claim 3, wherein the glass composition comprises, expressed in wt. %, 0 to 0.005 % of cerium oxide and has a FeO ratio of equal to or higher than 22% to lower than 40%; and
the glass sheet has, on the 4.0 mm thickness basis, an excitation purity of 0.25% or lower, where the excitation purity is measured with the illuminant C.
5. The high transmittance glass sheet according to claim 3, wherein the glass composition contains, expressed in wt. %, 0.02 to

- 0.25% of cerium oxide and has a FeO ratio of lower than 22%; and
the glass sheet has, on the 4.0 mm thickness basis, a solar radiation
transmittance of 90.0% or higher and a visible light transmittance of 90.5%
or higher, where the visible light transmittance is measured with the
5 illuminant C.
6. The high transmittance glass sheet according to claim 3,
wherein the glass composition contains, expressed in wt. %, 0 to
0.005% of cerium oxide, not more than 0.03% of manganese oxide, and not
10 more than 0.01% of vanadium oxide.
7. The high transmittance glass sheet according to claim 6,
wherein by ultraviolet radiation at a wavelength of not more than
400 nm, a transmittance at a wavelength of 1,000 nm of the glass sheet is
15 increased, on the 4.0 mm thickness basis, by not less than 0.1% with respect
to the transmittance of the glass sheet before being exposed to the
ultraviolet radiation.
8. The high transmittance glass sheet according to claim 6,
20 wherein after being exposed to ultraviolet radiation at a
wavelength of not more than 400 nm, the glass sheet has a FeO ratio of
lower than 22%.
9. The high transmittance glass sheet according to claim 6,
25 wherein when subjected to ultraviolet irradiation according to a
light stability test specified in Japanese Industrial Standards, R3212, the
glass sheet has, on the 4.0 mm thickness basis, a transmittance at a
wavelength of 1,000 nm that is increased by not less than 0.3% compared
with the transmittance of the glass sheet before being subjected to the
30 ultraviolet irradiation; and
after the ultraviolet irradiation, the glass sheet has a solar
radiation transmittance of 90.0% or higher and a visible light transmittance
of 90.5% or higher.
- 35 10. The high transmittance glass sheet according to claim 3,
wherein the glass composition comprises 0.025 to 0.20 wt. % of
cerium oxide; and

the glass sheet has a fluorescence intensity ratio of 10 or higher when subjected to ultraviolet irradiation at a wavelength of 335 nm, where the fluorescence intensity ratio is a ratio of a fluorescence intensity at a wavelength of 395 nm to a fluorescence intensity at a wavelength of 600 nm.

5

11. The high transmittance glass sheet according to claim 1,
wherein the glass composition further comprises, expressed in
wt. %:

65 to 80% of SiO_2 ,
10 0 to 5% of Al_2O_3 ,
0 to 7% of MgO ,
5 to 15% of CaO ,

where a total content of MgO and CaO is more than 7% and not
more than 17%,

15 10 to 18% of Na_2O ,
0 to 5% of K_2O ,
where a total content of Na_2O and K_2O is 10 to 20%, and
0.05 to 0.3% of SO_3 .

- 20 12. The high transmittance glass sheet according to claim 11,
wherein the glass composition is substantially free from fluorine,
boron oxide, barium oxide, and strontium oxide.

13. The high transmittance glass sheet according to claim 11,
25 wherein the glass composition is substantially free from Se, CoO ,
 Cr_2O_3 , NiO , V_2O_5 and MoO_3 .

14. The high transmittance glass sheet according to claim 1,
wherein the glass sheet is a tempered glass.

30

15. A method of manufacturing a high transmittance glass sheet as
claimed in claim 1, comprising:

adding a zinc compound to a glass raw material so that a content of
zinc oxide in the high transmittance glass sheet is 0.006 to 2.0 wt. %;

35

melting the glass raw material; and
forming the high transmittance glass sheet,
wherein the zinc compound is at least one selected from zinc nitrate

and zinc sulfate.

16. The method according to claim 15, further comprising tempering the high transmittance glass sheet.

5

17. A method of suppressing formation of nickel sulfide in a high transmittance glass sheet, the high transmittance glass sheet having a solar radiation transmittance of 87.5% or higher and/or a visible light transmittance of 90.0% or higher on a basis of a 4.0 mm thick glass sheet, the method comprising:

10

preparing a glass raw material so that a content of total iron oxide in terms of Fe_2O_3 is less than 0.020 wt % and a content of zinc oxide is 0.006 to 2.0 wt. %; and

melting the glass raw material.

15

18. A method of manufacturing a soda-lime glass that allows formation of nickel sulfide particles in a glass formed by melting to be suppressed by addition of a zinc compound to a glass raw material,

wherein when a content of total iron oxide (in terms of Fe_2O_3) in a glass is increased or decreased from a predetermined value, within a range of 0.005 wt. % to 0.06 wt. %, a content of the zinc oxide is decreased or increased from a predetermined value according to an increase or a decrease in the content of the total iron oxide, within a range of 0.006 to 2.0 wt. %, whereby the glass exhibits high transmittance with a visible light transmittance of 90.0% or higher on a basis of a 4.0 mm thick glass sheet, while suppressing formation of nickel sulfide particles in the glass.

20
25